

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
8 January 2004 (08.01.2004)

PCT

(10) International Publication Number  
**WO 2004/003073 A1**

- (51) International Patent Classification<sup>7</sup>: C08L 23/10, B29C 45/00 // (C08L 23/10, 23:08)
- (21) International Application Number: PCT/EP2003/006097
- (22) International Filing Date: 11 June 2003 (11.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
02014214.7 26 June 2002 (26.06.2002) EP
- (71) Applicant (for all designated States except US): BASELL POLIOLEFINE ITALIA S.P.A. [IT/IT]; Via Pergolesi 25, 20124 Milano (IT).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): PELLICONI, Antonio [IT/IT]; Via Volta, 22, 45030 Santa Maria Maddalena, Rovigo (IT). ANGELINI, Antonella [IT/IT]; Via Val Trebba, 16, 44100 Ferrara (IT). SGARZI, Paola [IT/IT]; Via Borgo dei Leoni, 83, 44100 Ferrara (IT).
- (74) Agents: GAVERINI, Gaetano et al.; Basell Poliolefine Italia S.p.A., Intellectual Property, Via Pergolesi, 25, I-20124 Milano (IT).
- (81) Designated States (national): AU, BR, CA, CN, CO, CZ, HU, ID, IL, IN, JP, KR, MX, NO, PH, PL, RO, RU, SG, SK, UA, US, YU, ZA.
- (84) Designated States (regional): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).
- Declarations under Rule 4.17:**
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
  - of inventorship (Rule 4.17(iv)) for US only
- Published:**
- with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: IMPACT-RESISTANT POLYOLEFIN COMPOSITIONS

(57) Abstract: Polyolefin compositions comprising (percent by weight): 1) 55-80% of a crystalline propylene homopolymer or copolymer containing up to 15% of ethylene and/or C<sub>4</sub>-C<sub>10</sub> α-olefin(s) and having an MFR value of at least 15 g/10 min, and 2) 20-45 wt% of a copolymer of ethylene with one or more C<sub>4</sub>-C<sub>10</sub> α-olefin(s) containing from 10 to 4 wt% of said C<sub>4</sub>-C<sub>10</sub> α-olefin(s). The said compositions have values of MFR equal to or higher than 15 g/10 min, a total content of ethylene of 20% or more, a total content of C<sub>4</sub>-C<sub>10</sub> α-olefin(s) of 4.5% or more, a ratio of the total content of ethylene to the total content of C<sub>4</sub>-C<sub>10</sub> α-olefin(s) of 2.3 or more, and an intrinsic viscosity value of the fraction soluble in xylene at room temperature of 1.7 dl/g or less.

WO 2004/003073 A1

# INTERNATIONAL SEARCH REPORT

International Application No

PCT 03/06097

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C08L23/10 B29C45/00 //(C08L23/10,23:08)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C08L B29C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 541 260 A (PELLICONI ANTEO ET AL) 30 July 1996 (1996-07-30)	1,2,4-10
Y	abstract column 1, line 5 -column 3, line 40; examples; tables 2-4	1-10
Y	US 4 734 459 A (CECCHIN GIULIANO ET AL) 29 March 1988 (1988-03-29) cited in the application abstract column 1, line 6 -column 2, line 46; tables I-II	1-10

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&\* document member of the same patent family

Date of the actual completion of the international search

25 September 2003

Date of mailing of the international search report

08/10/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Droghetti, A

# INTERNATIONAL SEARCH REPORT

International Application No  
PC 03/06097

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>EP 0 936 248 A (TOYOTA MOTOR CO LTD ;GRAND POLYMER CO LTD (JP)) 18 August 1999 (1999-08-18) abstract page 1, line 5 -page 2, line 19 page 2, line 50 - line 55 examples; tables 1-8 page 8, line 24 - line 41 -----</p>	1-10
A	<p>WO 01 19915 A (FERRARI PAOLO ;PELLICONI ANTEO (IT); SGARZI PAOLA (IT); CECCHIN GI) 22 March 2001 (2001-03-22) cited in the application abstract column 1, line 9 -column 3, line 52; examples; tables 1,2 -----</p>	1-10

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No  
PC 03/06097

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5541260	A	30-07-1996	IT 1256663 B	12-12-1995
			AT 140947 T	15-08-1996
			AU 667410 B2	21-03-1996
			AU 5236493 A	30-06-1994
			DE 69303881 D1	05-09-1996
			DE 69303881 T2	16-01-1997
			EP 0603723 A1	29-06-1994
			ES 2090829 T3	16-10-1996
			JP 7003087 A	06-01-1995
			MX 9307889 A1	29-07-1994
US 4734459	A	29-03-1988	IT 1206128 B	14-04-1989
			AT 46353 T	15-09-1989
			AU 582175 B2	16-03-1989
			AU 4555885 A	06-02-1986
			CA 1276350 C	13-11-1990
			DE 3572989 D1	19-10-1989
			EP 0170255 A1	05-02-1986
			ES 8700294 A1	01-01-1987
			JP 7042366 B	10-05-1995
			JP 61042553 A	01-03-1986
EP 0936248	A	18-08-1999	NO 852996 A , B,	31-01-1986
			JP 11228782 A	24-08-1999
			AU 745801 B2	11-04-2002
			AU 1643799 A	02-09-1999
			DE 69906845 D1	22-05-2003
			EP 0936248 A1	18-08-1999
WO 0119915	A	22-03-2001	US 6121363 A	19-09-2000
			AU 7517000 A	17-04-2001
			BR 0007075 A	10-07-2001
			CA 2349297 A1	22-03-2001
			CN 1321178 T	07-11-2001
			CZ 20012131 A3	13-03-2002
			WO 0119915 A1	22-03-2001
			EP 1135440 A1	26-09-2001
			HU 0104592 A2	28-03-2002
			JP 2003509562 T	11-03-2003
			NO 20012326 A	11-05-2001
			PL 347656 A1	22-04-2002
			TR 200101320 T1	21-12-2001
			US 6441094 B1	27-08-2002